

Patent Claims

1. A method for producing a split bearing arrangement, in which in several machining stations a top bearing part is separated in a predefined fracture plane from a base bearing part monolithically connected thereto via a fracture separation process by applying force, whereupon the two parts are joined back together by means of a screw connection comprising at least two screws, characterised in that

the base bearing part and the top bearing part are fixed on an adapter device that is conveyed from one machining station to another while the top bearing part is retained at least during some processes in the machining stations via a retractable auxiliary support disposed on the adapter device and engaging the top bearing part outside the area of the screw connection.

2. The method as according to claim 1, characterised in that the base bearing part is clamped to the adapter device in all the machining stations.
3. The method as according to claim 1, characterised in that there are main supports acting resiliently upon the top bearing part during the fracture separation process.
4. The method as according to claim 1, characterised in that the base bearing part and the top bearing part are subjected to a release and cleaning process in the fracture plane after the fracture separation process.
5. The method as according to claim 4, characterised in that the release process is carried out by vibrating or impacting action.
6. The method as according to claim 4, characterised in that the cleaning process is carried out by blowing, suctioning or brushing off.
7. The method as according to claim 4, 5 or 6, characterised in that the location of the top bearing part is fixed in parallel to the fracture plane with respect to the base bearing part during the release and cleaning process, whilst the top bearing part is being held in a loose manner in a direction perpendicular to the fracture plane.

8. The method as according to claim 1, characterised in that a fracture separation groove is incorporated in the fracture plane by a laser prior to the fracture separation process.
9. The method as according to one or more of the preceding claims 1 to 8, characterised in that the screws are inserted and tightened at a predetermined torque after the release and cleaning process.
10. The method as according to one or more of the preceding claims 1 to 9, characterised in that the conveyance of the adapter device to and from the individual machining stations is carried out via a carousel arrangement.
11. A device for producing a split bearing arrangement, in which the workpiece consisting of a base bearing part (5) and a top bearing part (6) monolithically connected thereto is conveyed at least to a fracture separation station for separating the top bearing part (6) from the base bearing part (5) and to a screwing station for joining back together the top bearing part and the base bearing part by means of at least a screw connection comprising two screws, characterised in that

a transport mechanism (2) is provided, via which an adapter device (1) supporting the workpiece is conveyed from one machining station to at least one subsequent machining station, with said adapter device (1) being equipped with a retractable auxiliary support (13) which is fixed to said adapter device so as to engage the top bearing part (6) of the workpiece outside the screw connection.
12. The production device as according to claim 11 for carrying out the method as according to claim 2, characterised in that clamping cylinders (9) interacting with counterstops (7, 8) are arranged on the adapter device (1) for clamping the base bearing part (5) to said adapter device.
13. The production device as according to claim 11 or 12 for carrying out the method as according to claim 3, characterised in that main supports (15) are provided in the fracture separation station, which are brought into resilient abutment against the top bearing part (6) during the fracture separation process.
14. The production device as according to claim 11, 12 or 13 for carrying out the method as according to claim 4, characterised in that a release and cleaning station is provided following the fracture separation station.

15. The production device as according to claim 14 for carrying out the method as according to claim 5, characterised in that the release and cleaning station is provided with a vibration or impacting device (19) which acts upon the top bearing part (6).
16. The production device as according to claim 14 for carrying out the method as according to claim 6, characterised in that the release and cleaning station is equipped with a blowing, suctioning or brush device.
17. The production device as according to one or more of the preceding claims for carrying out the method as according to claim 7, characterised in that a fixing means (16) is provided for an accurate fixation in location and for a loose hold.
18. The production device as according to claim 17, characterised in that the fixing means (16) comprises fixing and holding pins (17) which can be inserted into the bores for the screws.
19. The production device as according to claim 18 for a screw connection comprising two screws, characterised in that two fixing and holding pins (17) are provided, which are linked together at one end via a yoke (18).
20. The production device as according to claim 19, characterised in that the yoke (18) is connected to a feed cylinder.
21. The production device as according to one or more of the preceding claims for carrying out the method as according to claim 8, characterised in that a laser station is provided before the fracture separation station.
22. The production device as according to one or more of the preceding claims for carrying out the method as according to claim 9, characterised in that a screwing station is provided after the release and cleaning station, in which screwing station the screws are inserted and tightened at a predetermined torque via a screwing device.
23. The production device as according to one or more of claims 11 to 22 for carrying out the method as according to claim 10, characterised in that the transport mechanism (2) is substantially designed as a carousel arrangement (21), with the machining stations being distributed about its periphery.

24. The production device as according to claim 23, characterised in that a loading and unloading station, a laser station, a fracture separation station, a release and cleaning station, as well as a screwing station are provided in the region of the carousel arrangement (21).
25. The production device as according to claim 24, characterised in that the loading and unloading station, the screwing station and the laser station, as well as the fracture separation station and the release and cleaning station are each combined into a double station.